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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/635,867

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Susumu Kashiwase

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06/21/2010

SCHULTE ROTH & ZABEL LLP

ATTN: JOEL E. LUTZKER

919 THIRD AVENUE

NEW YORK, NY 10022

EXAMINER

NGO, NGUYEN HOANG

ART UNIT

PAPER NUMBER

2473

MAIL DATE

DELIVERY MODE

06/21/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/635,867

Applicant(s)

KASHIWASE, SUSUMU

Examiner

NGUYEN NGO

Art Unit

2473

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/24/2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 28-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 28-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

This communication is in response to the amendment of 5/24/2010. All changes to the Claims have been entered. Accordingly, Claims 1-21, 28-44, and 45-52 are currently pending in the application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-11, 16-21, 28-40, 45-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gitlin et al. (US 6018528), in view of Yano et al. (US 6563806), in view of Sawaki (US 5778319).

Regarding claim 1, 16, 28, 45 Gitlin discloses a communication system comprising:

a first wireless communication terminal (low-speed users D, K, N, P, R, S, T of figure 5) for performing a packet communication (communications transmission medium, column2 lines 58-60) with respect to said base station by using one carrier (low-speed users will be permitted to fill one or more of the available time slots 44 in a frame (one carrier), column 4 lines 88-23 and 50 of figure 5); and

a second wireless communication terminal (high speed users B, G, L of figure 5) for performing a packet communication with respect to said base station by using a plurality of carriers at the same time (higher-speed users can fill one ore more of the available frequency bands 42 (plurality of carriers) or time slots 44, col4 lines 20-23),

Gitlin however fails to specifically disclose the specific limitation of a base station and it's specific components. Gitlen however discloses of cellular communication systems that may use the concept described above (col1 lines 5-31) and it is well-known that a cellular communication system comprises a base station. In a similar endeavor, Yano discloses of such a system comprising a base station, a first

wireless communication terminal and a second wireless communication terminal (figure 1 and abstract). Yano further discloses;

allocation information allocating section for allocating allocation information to a wireless communication terminal when at least one carrier is allocated to either said first wireless communication terminal or said second wireless communication terminal (processor (CPU) which serves as channel assignment unit based on the invention and generating a information frame indicative of granting a multi-channel assignment (plurality of carriers) or indicative of granting a single-channel assignment (one carrier) which are transmitted by basestation to the mobile stations, abstract and col4 lines 63-68 and col4 lines 41-67 and col12 lines 34-53 and col9 lines 34-43 and figure 2);

It would thus be obvious to a person skilled in the art at the time the invention was made to incorporate the concept of optimizing spectral efficiency using time-frequency code slicing as disclosed by Gitlin into the system comprising a base station for assigning communication channels as disclosed by Yano in order to send data between base stations and user terminals in a efficient manner.

The combination of Yano and Gitlin however fails to specifically disclose the details of a storage section for storing said allocation information wherein said allocation information is for identifying a wireless communication terminal communicating with said base station, and wherein said allocation information is for

identifying one carrier or a plurality of carriers. Yano however discloses of ram which stores various tables wherein a first management table is used for registering at least on candidate channel for single-channel communications (one carrier) and a second management table for registering a group of candidate channels for multi-channel communications (plurality of carrier), (col3 lines 1-15 and col4 lines 63-67 and col5 lines 53- col6 line 7 and figure 2) and further discloses of assigning channels to mobile stations at the base station (col2 lines 44-50 and col5 lines 53-62 and col9 lines 34-43). Yano also discloses of sending information frames indicative of assignments, channel configuration, base station identifier, and the like (col12 lines 37-52). In a similar field of endeavor, Sawaki discloses the similar concept of assignments of channels from a parent station (base station) to a plurality of child stations (abstract). Sawaki further discloses of tables used to store such information as mobile identifiers and channels which they are assigned to (col9 lines 54-col10 lines 12), more specifically Sawaki discloses;

allocation information for identifying a wireless communication terminal communicating with said base station (table stores an identifier of a call in correspondence with the identifier of each mobile station, col10 lines 8-11), and

allocation information is for identifying one carrier or a plurality of carriers (radio channels that are assigned in relation to each mobile station, col10 lines 1-8)

It would have thus been obvious to a person skilled in the art at the time the invention was made to incorporate the concept of storing allocation information (information regarding mobile station and which channels are assigned to the connection) as disclosed by Sawaki into the method for assigning communication channel at a base station as disclosed by Gitlin and Yano, in order to efficiently and correctly store the needed information at a base station so that communications may be accomplished through channels from the base station to a mobile station and so that data may be transferred through the correct channels.

Regarding claim 2, 3, 29, 30, the combination of Gitlin, Yano, Sawaki, more specifically Yano discloses a wireless communication system as claimed in claim 1 wherein

said allocation information storage section stores said allocation information in such a manner that said allocation information is arrayed in accordance with a predetermined sequence; and said allocation information applying means allocates said allocation information with respect to said first wireless communication terminal from one direction of said array, and also allocates said allocation information to said second wireless communication terminal from the other direction of said array (col5 lines 35-45).

Regarding claim 4, 31, the combination of Gitlin, Yano, Sawaki, more specifically Yano discloses having said allocation information storage section store the allocation

information allocated to said wireless communication terminal as separate arrays (col5 line51-col6 line8 and col15 lines 25-56).

Regarding claim 5, 9, 17, 19, 21, 32, 38, 46, 50, 52, the combination of Gitlin, Yano, Sawaki, more specifically Gitlin discloses a wireless communication system as claimed in claim 1 wherein said packet communication is carried out by using a variable length packet (figure 4).

Regarding claim 6, 7, 10, 11, 18, 20, 35, 36, 39, 40, 49, 51, the combination of Gitlin, Yano, Sawaki. more specifically Gitlin discloses a communication system as claimed in claim 1, further time slot allocating section for allocating time slots which are used in packet communications by said first and second wireless communication terminals (as seen in figure 5), the time slot allocating section allocates one wireless communication terminal among said first and second wireless communication terminals to one unit of a time slot distribution used by said first (low-speed users D, K, N, P, R, S, T being allocated one time slot as seen in figure 5) and second wireless communication terminals in the packet communications every said carrier (high-speed user G being allocated to time slots across frequency bands f0 to f6 of figure 5). Gitlin further discloses allocation of first wireless communication terminal and second wireless communication terminal be in an independent manner (independent transmissions, col8 lines 24-30).

It should further be noted that Yano discloses that in TDMA, carrier frequencies are used to transmit a frame, which includes multiple time slots having these carrier frequencies (col5 lines 5-13) thus the base station of Yano discloses a frame allocating section (figure 2).

Regarding claim 8, 37 the combination of Gitlin, Yano, Sawaki, fails to specifically disclose allocating said first wireless communication terminal and said second wireless communication terminal in an alternate manner. However this would have been obvious to a person skilled in the art to alternate allocations between users, as this is simply a network parameter that may be chosen by the network/administrator. It should further be noted that this is simply a system design choice.

Regarding claims 33, 34, 47, 48, the combination of Gitlin, Yano, Sawaki, more specifically Yano discloses a wireless communication system as claimed in claim 28 wherein when said second wireless communication terminal performs the communication by using said plurality of carriers, said allocation information applying section allocates said single-carrier/multi-carrier allocation information to said second wireless communication terminal in a case that said multi-carrier/single carrier allocation information is unavailable (col2 lines 56-67 and col10 lines 1-12 and col12 lines 20-33).

4. Claims 12-15, 41-44, are rejected under 35 U.S.C. 103(a) as being unpatentable over Gitlin et al. (US 6018528), in view of Yano et al. (US 6563806), in view of Sawaki (US 5778319), in further view of Krishnamoorthy et al. (US 2002/0051424).

5. **Regarding claim 12-15, 41-44** the combination of Gitlin, Yano, and Sawaki fails to specifically disclose having the time slot distribution determining section determine the time slot distributions which can be used by said first wireless communication terminal and said second wireless communication terminal based upon a comparison result. Yano however discloses selecting a channel that meets the specified communication quality (col1 lines 34-40). Krishnamoorthy however discloses a method for assigning time slots to a user based upon user's data rate requirement, the actual data rate, and quality of service contracted for by the user. Krishnamoorthy further discloses that the assignment of the time slots within the frame is made dynamically (abstract and page 1 [0004]). It would have thus been obvious to a person skilled in the art at the time the invention was made to incorporate the concept of determining the time slot distributions which can be used by a user as disclosed by Krishnamoorthy, into the method of optimizing spectral efficiency using time-frequency code slicing as disclosed by Gitlin and Yano in order to efficiently determine the allocation of time slots to different users.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

2. Ishii et al. (US 6504833)
3. Wang et al. (US 6826160)
4. Sjoberg et al. (US 7023826)

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGUYEN NGO whose telephone number is (571)272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571)272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KWANG B. YAO/
Supervisory Patent Examiner, Art Unit 2473

/N. N./

Examiner, Art Unit 2473